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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

ACER, INC., ACER AMERICA)
CORPORATION and GATEWAY, INC.,)

Plaintiffs,)

v.)

TECHNOLOGY PROPERTIES LIMITED,)
PATRIOT SCIENTIFIC CORPORATION,)
and ALLIACENSE LIMITED,)

Defendants.)

Case Nos. 5:08-cv-00877

**DEFENDANTS' REPLY IN SUPPORT
OF ITS MOTION FOR
RECONSIDERATION OF CERTAIN
ASPECTS OF CLAIM
CONSTRUCTION**

1 HTC CORPORATION and HTC
2 AMERICA, INC.,

3 Plaintiffs,

4 v.

5 TECHNOLOGY PROPERTIES LIMITED,
6 PATRIOT SCIENTIFIC CORPORATION
7 and ALLIACENSE LIMITED,

8 Defendants.

Case No. 3:08-cv-00882 PSG

9 BARCO, N.V.,

10 Plaintiffs,

11 v.

12 TECHNOLOGY PROPERTIES LIMITED,
13 PATRIOT SCIENTIFIC CORPORATION
14 and ALLIACENSE LIMITED,

15 Defendants.

Case No. 3:08-cv-05398 PSG

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Introduction

Defendants' instant Motion seeks reconsideration of the Court's construction of the phrase "separate direct memory access central processing unit" ("DMA CPU") in claim 11 of U.S. Patent No. 5,530,890 ("the '890 patent").¹ The Court construed that phrase to mean:

a central processing unit that accesses memory and that fetches and executes instructions directly, separately, and independently of the main central processing unit.

(Order [Dkt. No. 336] at 13). However, the Court's reasoning only took into account the first of two embodiments described in the '890 patent's specification. As a result, the Court's construction of DMA CPU improperly limited that term to that first embodiment and excluded the second embodiment. Defendants respectfully submit that their originally proposed construction of DMA CPU—"electrical circuit for reading and writing to memory that is **separate from a main CPU**"—is the proper construction for this term in view of the intrinsic record evidence. This construction avoids improperly limiting the claims to a single embodiment to the exclusion of others.

The '890 patent discloses two distinct embodiments. The first embodiment, shown in Figs. 1-8, includes a microprocessor 50 with a DMA CPU 72 (detailed in Fig. 5) possessing "the ability to fetch and execute instructions [that] operates as a co-processor to the main CPU." *See* '890 patent, 8:1; Fig. 5; 8:22-24. DMA CPU 72 of the first embodiment was referred to in Defendants' motion as a DMA co-processor. *See* Mot. at 1. In contrast, the second embodiment, shown in Fig. 9, includes a different microprocessor 310 with a "**more traditional DMA Controller 314**," which has replaced the DMA CPU 72 "[t]o keep chip size as small as possible" because the microprocessor 310 is "on an already crowded DRAM die." DMA 314 is referred to interchangeably in the specification as "DMA controller 314" or "**DMA CPU 314**." *See* '890

¹ Claim 11, which resulted from the reexamination proceeding, is identical to originally issued claim 1 except for the addition of the phrase "said stack pointer pointing into said first push down stack."

1 patent, 12:61-65; Fig. 9; 10:52; 13:3-4. DMA CPU 314 of the second embodiment was referred
2 to as a conventional DMA controller in Defendants' motion. *See* Mot. at 1. The Court's
3 construction of the DMA CPU, which requires a unit capable of fetching and executing
4 instructions independently from the CPU, includes the DMA CPU 72 of the first embodiment but
5 excludes DMA CPU 314 of the second embodiment.

6 In their Motion for Reconsideration, Defendants cited two portions of the intrinsic
7 record—(1) a restriction requirement of the parent application, and (2) reexamination
8 proceedings—not discussed during claim construction as additional evidence that the
9 conventional DMA controller (DMA CPU 314) of the '890 patent's second embodiment is
10 within the scope of the DMA CPU recited in claim 11. Both the restriction requirement and the
11 reexamination proceedings are consistent with the overall intrinsic record that the claimed DMA
12 CPU should be construed to cover the conventional DMA controller of the second embodiment.

13 Plaintiffs argue in opposition that the restriction requirement is irrelevant to the
14 construction of DMA CPU. Plaintiffs are wrong. The restriction requirement further confirms
15 that the DMA CPU (identically recited in claims 1 and 11) was not limited to a DMA co-
16 processor *that fetches and executes instructions*, as the Court held. *See* Order at 13. Moreover,
17 Plaintiffs' arguments that restriction requirements should be given no weight or consideration for
18 claim construction is directly contradicted by binding Federal Circuit precedent in a factually
19 similar case. *See Rambus Inc. v. Infineon Techs. AG*, 318 F.3d 1081, 1095 (Fed. Cir. 2003).

20 Plaintiffs' arguments that the reexamination proceedings provide no basis for
21 reconsideration are also incorrect. The reexamination proceedings are relevant as part of the
22 intrinsic record of the '890 patent, and positions taken by the patent examiner during those
23 proceedings support Defendants' proposed construction of DMA CPU. Plaintiffs attempt to
24 argue that those positions taken during the reexamination proceedings are not relevant by
25 claiming that they were never adopted by the patent examiner, but those claims are demonstrably
26 false. The examiner not only agreed with and adopted the third-party requester's arguments,
27 citing the exact same portions of the underlying prior art references, but also expressly
28

1 incorporated those arguments in the order determining that a substantial question of patentability
2 existed and instituting the reexamination proceedings.

3 Finally, independent of the restriction requirement and the reexamination proceedings,
4 the '890 patent's specification and other intrinsic evidence demonstrate that the construction
5 Defendants urge is correct. For all of these reasons, the Court should grant Defendants' motion
6 and change its construction of DMA CPU to "electrical circuit for reading and writing to
7 memory that is separate from a main CPU," as Defendants originally argued.

8 Argument

9 **I. THE RESTRICTION REQUIREMENT IS RELEVANT AND SUPPORTS** 10 **DEFENDANTS' PROPOSED CONSTRUCTION.**

11 The original application upon which the '890 patent claims priority was subject to a ten-
12 way restriction requirement, which supports Defendants' proposed construction. Group III,
13 which was pursued in a separate divisional and eventually abandoned, was "drawn to a
14 microprocessor system having a DMA *for fetching instruction for* a CPU and *itself*." Chen
15 Decl. [Dkt. No. 368-1], Ex. 6 [Dkt. No. 368-7] at 2 (emphasis added). In other words, Group III
16 was limited to a microprocessor system having a DMA co-processor of the type described in
17 connection with the specification's first embodiment (*e.g.*, DMA CPU 72). *See* '890 patent, 8:1;
18 Fig. 5; 8:22-24 ("The DMA CPU 72 controls itself and has the ability to fetch and execute
19 instructions.").

20 Group VIII, which became the subject of the '890 patent, on the other hand, was more
21 broadly "drawn to a microprocessor architecture." Chen Decl., Ex. 6 at 3. Importantly, Group
22 VIII was never limited to a DMA co-processor. Unlike Group III, Group VIII did not specify
23 that the DMA be capable of fetching or executing instructions for a CPU or itself. The
24 broader scope of Group VIII was consistent with the specification, which describes two distinct
25 microprocessor architectures:

26 (1) microprocessor 50 described in connection with Figs 1-8, which uses a DMA co-
27 processor DMA CPU 72 capable of fetching and executing its own instructions (*see* '890
28 patent, 8:1; Fig. 5; 8:22-24); and

1 (2) microprocessor 310 described in connection with Figure 9, which uses “a more
2 traditional DMA controller 314” also referred to as “DMA CPU 314,” in order “[t]o keep
chip size as small as possible” (*see* ’890 patent, 12:61-66; Fig. 9; 10:52; 13:3-4).

3 There is nothing in the file history that limits the claims of Group VIII to one of these two
4 architectures. Hence, Group VIII should cover both embodiments described in the specification,
5 absent some limiting language in the file history. *See Phillips v. AWH Corp.*, 415 F.3d 1303,
6 1323 (Fed. Cir. 2005) (*en banc*) (“[A]lthough the specification often describes very specific
7 embodiments of the invention, we have repeatedly warned against confining the claims to those
8 embodiments.”). The Court construction of the DMA CPU in a way that limits it to the first
9 embodiment is improper. *Id.*

10 Plaintiffs argue that the restriction requirement is “irrelevant to the construction of DMA
11 CPU.” *Opp.* at 3-6. In support of their argument, Plaintiffs cite an un-reported, non-binding
12 2002 case from the District of Oregon that says that “[r]estriction requirements do not constitute
13 a substantive claim construction doctrine.” *See id.*, at 5 (quoting *Michaels of Oregon Co. v.*
14 *Clean Gun, LLC*, No. Civ. 01-1158, 2002 WL 21496414, at *8 (D. Or. July 9, 2002)).² Plaintiffs
15 are incorrect. Courts can and should consider restriction requirements in claim construction
16 proceedings where relevant, as more recent binding Federal Circuit precedent makes clear.

17 In *Rambus v. Infineon*, the Federal Circuit overturned a district court’s decision where the
18 district court’s narrow construction of the term “bus” was contradicted by a restriction
19 requirement and the patent holder’s response to it. *Infineon*, 318 F.3d at 1095. The patents at
20 issue in *Infineon* involved a ten-way restriction requirement followed by a two-way restriction
21 requirement. *Id.* In the two-way restriction requirement, the Patent and Trademark Office
22 (“PTO”) divided the claims “into two distinct groups: a multiplexing bus group (Group I) and a
23 latency invention group (Group II).” *Id.* The patent at issue was based on the claims from
24 Group II, which recited the term “bus” without referencing multiplexing. *Id.* The district court

25
26 ² Plaintiffs also cite the *Amerham* case in support of their argument (*see Opp.* at 3,
27 5-6), which is inapposite and distinguished below.

1 construed the term “bus” to require a multiplexing bus, even though the claims were not part of
2 the “multiplexing bus group (Group I),” and did not include any language about multiplexing.
3 *Id.* . The Federal Circuit reversed, holding that “the district court erred in its construction of each
4 of the disputed claim terms.” *Id.* . In addition to noting that the elected claim group was not
5 directed to multiplexing, the Court also noted the patent holder in that case “did not redefine
6 ‘bus’ to be a multiplexing bus in the patents-in-suit” and that none of the patent holder’s
7 statements “constitute[d] a clear disavowal of claim scope. *Id.* .

8 *Infineon*’s similarities to this case are striking. In *Infineon*, the specification supported
9 multiple embodiments such that the claim term at issue (“bus”) could be interpreted multiple
10 ways (*i.e.*, a “multiplexing bus” and a “‘bus’ that is not limited to a multiplexing bus”). *Id.*
11 Similarly, the ’890 patent’s specification includes multiple embodiments such that the DMA
12 CPU term at issue is susceptible to multiple interpretations including (1) DMA CPU 72 shown in
13 Fig. 5 with the ability to fetch and execute instructions, and (2) DMA CPU 314, the conventional
14 DMA controller shown in Fig. 9. In *Infineon*, the restriction requirement included a group of
15 claims that involved one specific embodiment of the invention that required limiting the claim
16 term at issue to just one of possible interpretations (*i.e.*, Group I limiting “bus” to a
17 “multiplexing bus”), but the patent at issue resulted from another group that did not so limit the
18 term (*i.e.*, Group II not limited to a “multiplexing bus”). *Infineon.*, 318 F.3d at 1095. Similarly,
19 in this case, the restriction requirement included a group of claims (Group III) that involved one
20 specific embodiment that uses a DMA CPU that is able to fetch instructions for itself, but the
21 patent at issue resulted from another group (Group VIII) that did not so limit the DMA CPU
22 claim term. Also, as in *Infineon*, there has not been—and the Court did not point to—any
23 “disclaimer or disavowal of claim scope” that would limit the claimed DMA CPU to one of the
24 described embodiments. *Id.* .; *See Phillips*, 415 F.3d at 1316. In this case, the Court improperly
25 limited the DMA CPU claim term at issue to a specific embodiment associated with a group of
26 claims not pursued in the patent at issue. *See Mot.* at 13. Similarly, the district court in *Infineon*
27 improperly limited the claim term at issue (“bus”) to the specific embodiment associated with the
28 group of claims not pursued in the patents at issue (“multiplexing bus”). As a result, the Federal

1 Circuit held the “district court erred in its construction of each of the disputed terms,” when it
 2 unnecessarily limited the claim term at issue. *Infineon*, 318 F.3d at 1095.

3 Contrary to Plaintiffs’ arguments against the relevance of the restriction requirement,
 4 other courts have also relied on restriction requirements for the purposes of claim construction.
 5 For example, the Northern District of Illinois relied on the group of claims selected by a patentee
 6 in response to a restriction requirement to construe the patent claims. *Albecker v. Contour*
 7 *Products, Inc.*, No. 09 C 0631, 2010 WL 1839803, at *8 (N.D. Ill. May 3, 2010). The *Albecker*
 8 court refused to import an additional limitation in its claim construction where the patentee had
 9 elected and pursued a claim group that did not include that limitation. *Id.* This case presents a
 10 similar situation where the group elected and pursued (Group VIII) did not include the additional
 11 limitation that the DMA be capable of fetching instructions for a CPU and itself, unlike Group
 12 III. *See also Acumed LLC v. Stryker Corp.*, 483 F.3d 800, 805–06 (Fed. Cir. 2007) (rejecting
 13 attempt to limit claim construction to single embodiment and noting that examiner had restricted
 14 out narrower claims directed to that embodiment), *cert. denied*, 552 U.S. 1022 (U.S. 2007); *LG*
 15 *Elecs., Inc. v. Bizcom Elecs., Inc.*, 453 F.3d 1364, 1373 (Fed. Cir. 2006), *rev'd on other grounds*,
 16 553 U.S. 617 (U.S. 2008) (district court erred reading requirement into claims from embodiment
 17 restricted out by examiner and pursued in divisional application).

18 The cases Plaintiffs cite are readily distinguishable and do not compel a contrary result.
 19 Plaintiffs cite *Rambus v. Hynix* as supporting the idea that restriction requirements are of limited
 20 evidentiary significance. *See* Opp. at 3 (citing *Rambus Inc. v. Hynix Semiconductor Inc.*, 569 F.
 21 Supp. 2d 946, 962 (N.D. Cal. 2008)). However, contrary to Plaintiffs’ suggestions that the
 22 restriction requirements at issue in *Hynix* were not relevant to claim construction, the Federal
 23 Circuit considered some of the very same restriction requirements in the related *Infineon* case
 24 discussed above, and specifically used those restriction requirements as a partial basis for
 25 determining that the district court had erred in its claim construction. *See Infineon*, 318 F.3d at
 26 1095. Restriction requirements are relevant to claim construction issues. Plaintiffs’ citation of
 27 *Amerham Pharmacia* is unavailing because, unlike *Amerham*, Defendants in this case are not
 28 trying to use a restriction requirement to “controvert the plain language of the claim.” *See* Opp.

1 at 3, 5-6 (citing *Amerham Pharmacia Biotech, Inc. v. Perkin-Elmer Corp.*, No. C 97-CV-4203
 2 CRB, 2000 WL 34204509, at *15-16 (N.D. Cal. Feb. 28, 2000)). To the contrary, the restriction
 3 requirement in this case *confirms* that the claim includes both embodiments described in the
 4 specification, and is not limited to just one embodiment pursued in a divisional application. *See*
 5 *Infineon*, 318 F.3d at 1095. Plaintiffs' citation to *Honeywell* is similarly unavailing because the
 6 *Honeywell* decision turned on the fact that the patentee had expressly limited the claim term at
 7 issue, "fuel injection system component," to "fuel filter" in at least four places in the written
 8 description. *Honeywell Int'l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed. Cir. 2006)).
 9 There is no such express limitation in the '890 patent's specification that could be used to limit
 10 the claim scope of that patent. *See Phillips*, 415 F.3d at 1316. Instead, the '890 patent's
 11 specification expressly refers to two different embodiments involving different types of DMA
 12 CPUs: DMA CPU 72 and DMA CPU 314.

13 Finally, Plaintiffs' straw-man argument about the overlapping subject matter of claims
 14 from different independent claim groups identified in the restriction requirement is misplaced.
 15 *See Opp.* at 4-5. Plaintiffs argue that Defendants' motion for reconsideration is flawed because
 16 Group III and Group VIII, as well as other groups identified in the restriction requirement may
 17 recite common features. *Id.* Plaintiffs' argument misses the point. Defendants are not arguing
 18 that Group VIII cannot include the DMA CPU 72 of the first embodiment—to the contrary,
 19 Defendants argued and continue to argue that the restriction requirement supports Defendants'
 20 original claim construction position, which has always encompassed both embodiments and
 21 "does not limit the construction of DMA CPU to only one of the two disclosed microprocessor
 22 architecture embodiments (Figs. 2 and 9)." *Mot.* at 7.

23 Like the rest of the intrinsic record, the restriction requirement supports Defendants'
 24 proposed construction of DMA CPU.

25 **II. THE REEXAMINATION PROCEEDINGS ARE RELEVANT AND SUPPORT** 26 **DEFENDANTS' PROPOSED CONSTRUCTION.**

27 The reexamination proceeding cited in Defendants' Motion for Reconsideration further
 28 supports Defendants' proposed claim construction. Specifically, the reexamination proceedings

1 confirm that the claimed DMA CPU was understood throughout those proceedings to mean a
2 conventional DMA controller. *See* Mot. at 5-6. In other words, the reexamination proceedings
3 confirm that the proper construction of DMA CPU must include the conventional DMA
4 controller (DMA CPU 314) of the second embodiment, and not be limited to just the DMA co-
5 processor (DMA CPU 72) of the first embodiment. Specifically, Defendants noted that the third-
6 party reexamination requester indicated that the claimed DMA CPU would have been considered
7 obvious because the prior art reference Tsuchiya (U.S. Patent No. 4,783,764) describes a
8 microprocessor that includes a conventional DMA controller on a single integrated circuit with a
9 CPU. *Id.* at 6. Defendants also pointed out that the PTO granted the reexamination partially on
10 the basis of Tsuchiya describing this feature using a conventional DMA controller. *Id.*

11 Plaintiffs attempt to minimize the reexamination proceedings by arguing that the
12 statements cited in the Motion are merely “statements of an anonymous third party
13 reexamination requester—which were not adopted by either the patent owner or the Examiner.”
14 Opp. at 6. Plaintiffs further argue that “the third party requester’s statements regarding the
15 ‘DMA CPU’ were not adopted by either the Examiner or TPL, and thus should carry no weight
16 in claim construction.” This argument is demonstrably false.

17 The patent examiner not only adopted these arguments, equating a conventional DMA
18 controller to the claimed DMA CPU, but the examiner actually expressly ***incorporated them by***
19 ***reference*** into the order he issued granting the reexamination request. After considering the
20 reexamination request, the examiner found that the reexamination request raised three substantial
21 new questions of patentability (“SNQs”) with respect to the ’890 patent. Breit Decl., Ex. A
22 (Order Granting Reexamination) at 4, ¶ 6. As the Order states, with respect to the third SNQ, the
23 examiner adopted the third-party requestor’s argument that “Tsuchiya describes a
24 microprocessor further including a separate direct memory access central processor unit,” and
25 cited to the same Tsuchiya selection referenced in the reexamination request. *Id.*, at 7, ¶ 11
26 (citing Tsuchiya at “col. 4, line 51 – col. 5, line 52”) *compare* Chen Decl., Ex. 7 (Reexamination
27 Request) [Dkt. No. 368-8] at 11-12 (citing Tsuchiya at “Col. 4, line 51 to Col. 5, line 52”). The
28 examiner went further, incorporating by reference additional discussion of this and other

1 arguments in the reexamination request, which formed the basis of the examiner's determination
2 that substantial new questions of patentability existed and a reexamination should be ordered:

3 The additional passages regarding the limitations of claim 1, as described in May and
4 Tsuchiya, pointed out in the Request for Reexamination in the claim chart on pages 26
5 through 32, **are hereby incorporated by reference** for their explanation of the teaching
6 provided in May and Tsuchiya, which were not present in the prosecution of the
7 application which became the '890 Patent. Further, there is substantial likelihood that a
8 reasonable examiner would consider these teachings important in deciding whether or not
9 the claim is patentable. Accordingly, May and Tsuchiya raise a substantial new question
10 of patentability as to independent claim 1 [and claims 2-10].

11 Breit Decl., Ex. A (Order Granting Reexamination) at 8, ¶ 11 (emphasis added).

12 The portion of the reexamination request that was incorporated by reference into the
13 order granting reexamination, and which formed the partial basis for the examiner's finding that
14 a substantial new question of patentability existed, discussed the claimed DMA CPU at length.
15 See Chen Decl., Ex. 7 at 26-27. That incorporated portion of the request stated that "[a]t the time
16 of filing, the use of an on-chip DMA controllers [*sic*] was well known in the art." *Id.* at 26. The
17 request then cited passages from a number of patents as examples, including the same portion of
18 the Tsuchiya patent cited in the request and the order (*i.e.*, col. 4, line 51 – col. 5, line 52), and
19 stated that "it would have been obvious to one skilled in the art to include an on-chip DMA
20 controller with the processor taught by May." *Id.* at 27. The request then goes on to describe the
21 "Direct Memory Access controller" of the Tsuchiya reference, which the requestor said was "just
22 one of many patents which demonstrate that the DMA controllers were conventionally placed on
23 the same chip" as the CPU at the time of the '890 patent. *Id.*

24 Contrary to Plaintiffs' arguments, these are *the patent examiner's* positions, taken on
25 behalf of the PTO, ***expressly incorporated by reference in the PTO's order*** finding a substantial
26 new question of patentability in and granting reexamination of the '890 patent's claims. See
27 Breit Decl., Ex. A at 8, ¶ 11. In other words, this is part of the intrinsic record of the '890 patent,
28 and not merely a collection of statements made by an anonymous third-party requester.

29 Moreover, during the reexamination proceedings, the Examiner also relied on U.S. Patent No.
30 4,989,113 to Hull, another reference cited in the section the examiner incorporated by reference
31 as teaching a conventional DMA controller in subsequent office actions in the reexamination

proceedings. *See* Breit Decl., Ex. B (Non-Final Office Action) at 4, ¶ 6 (noting the Hull reference teaches the use of on-chip DMA controllers and can be interpreted as teaching other claim features). In fact, the examiner goes so far as to equate the conventional DMA controller (DMA Control 22 of Fig. 1) of Hull with the claimed “separate direct memory access central processing unit.” *Id.* at 5, ¶ 8. When finally rejecting the claim, the examiner incorporating the same section again equated the claimed DMA CPU to the conventional DMA controller of Hull. *See* Breit Decl., Ex. C (Final Office Action) at 3, ¶ 4.

This reexamination proceeding—a part of the intrinsic record—further underscores the fact that the claimed DMA CPU includes both the DMA co-processor of the first embodiment in the ’890 patent (DMA CPU 72) *as well as the conventional DMA controller of the second embodiment* (DMA CPU 314). There is nothing in the intrinsic record that suggests the claimed DMA CPU should be limited to the first embodiment as the Court held in its claim construction order. *See* Order at 13 (limiting the claimed DMA CPU to “a central processing unit that accesses memory and that fetches and executes instructions directly, separately, and independently of the main central processing unit.”).

Like the rest of the intrinsic record, the reexamination proceeding supports Defendants’ proposed construction of DMA CPU.

III. THE INTRINSIC RECORD AS A WHOLE SUPPORTS DEFENDANTS’ PROPOSED CONSTRUCTION.

Beyond just the restriction requirement and the reexamination proceeding, the entire intrinsic record supports Defendants’ proposed construction of DMA CPU, which encompasses both embodiments of the DMA CPU described in the ’890 patent’s specification. As the Federal Circuit has recognized, a district court is welcome to “revisit and alter its interpretation of the claim terms as its understanding of the technology evolves.” *Pfizer, Inc. v. Teva Pharm., USA, Inc.*, 429 F.3d 1364, 1377 (Fed. Cir. 2005); *see also Utah Med. Prods., Inc. v. Graphic Controls Corp.*, 350 F.3d 1376, 1381-82 (Fed. Cir. 2003) (district court did not err amending claim construction during oral arguments for pretrial motions nearly two years after original construction). Indeed, when parties raise actual disputes regarding claim scope, the Court must

1 resolve that dispute. *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., Ltd.*, 521 F.3d 1351,
2 1360 (Fed. Cir. 2008).

3 As explained above, the '890 patent's specification discloses and describes two
4 embodiments involving two different microprocessors, each of which involves a distinct type of
5 DMA CPU. The first embodiment involves microprocessor 50 shown in connection with
6 Figures 1-8 of the '890 patent and involves the DMA co-processor DMA CPU 72. "Details of
7 the DMA CPU 72 are provided in FIG. 5." '890 patent, 8:1. The specification expressly states
8 that the DMA CPU 72 "operates as a co-processor to the main CPU." '890 patent, 8:23-24. In
9 particular, the specification points out that the "DMA CPU 72 controls itself and has the ability
10 to fetch and execute instructions." '890 patent, 8:22-23.

11 The specification also describes a second embodiment, which uses a different
12 microprocessor 310 and a traditional DMA controller 314, which differs from the DMA co-
13 processor DMA CPU 72. The specification expressly calls out this second embodiment shown
14 and described in connection with Fig. 9. '890 patent at 4:60-62 ("FIG. 9 is a layout diagram of
15 *a second embodiment of a microprocessor in accordance with the invention* in a data
16 processing system on a single integrated circuit.") In particular, the specification notes that the
17 microprocessor 310 is used on "an already crowded DRAM die 312." '890 patent, 8:61-62.
18 Because of the tight quarters associated with this second embodiment, the patent notes that "[t]o
19 keep chip size as small as possible, the DMA processor 72 of the microprocessor 50 *has been*
20 *replaced with a more traditional DMA controller 314.*" '890 patent, 8:62-65 (emphasis added).
21 In other words, the second embodiment uses a more traditional DMA controller, which is shown
22 as DMA CPU 314 in Fig. 9. That more traditional DMA controller associated with the second
23 embodiment is referred to interchangeably as "DMA controller 314" or "*DMA CPU 314*" in the
24 specification. *See, e.g.*, '890 patent, 12:61-65; Fig. 9; 10:52; 13:3-4. Unlike the DMA co-
25 processor DMA CPU 72 of the first embodiment, the DMA CPU 314 of the second embodiment
26 is not described as fetching or executing its own commands independent of the CPU. *Cf.* '890
27 patent, 8:22-23. Instead, the specification states that the DMA controller 314 of the second
28 embodiment "is used *with the microprocessor 310*" to perform certain functions, such as video

1 output, multiprocessor serial communications, and 8-bit parallel I/O. '890 patent, 12:65-13:2.
 2 The specification makes clear that this “more traditional DMA controller 314” of the second
 3 embodiment—unlike the self-sufficient DMA co-processor 72 of the first embodiment—can
 4 only function when controlled by and “used with the microprocessor 310” to accomplish
 5 functions “supported by the microprocessor 310.” *See* '890 patent, 12:65-13:12.

6 The Court’s construction of the term DMA CPU encompasses the first embodiment
 7 described in the '890 patent, but excludes the second embodiment. Specifically, the Court’s
 8 opinion held that the term “separate direct memory access central processing unit” of claim 11 of
 9 the '890 patent means “a central processing unit that access memory and that fetches and
 10 executes instructions directly, separately, and independently of the main central processing unit.”
 11 Order [Dkt. No. 336] at 12. In other words, the Court’s construction would include the DMA
 12 CPU 72 of Figures 1-8, “which controls itself and has the ability to fetch and execute
 13 instructions” ('890 patent, 8:22-23), but would not include the DMA CPU 314, which is “a more
 14 traditional DMA controller” and functions only when “used with the microprocessor 310” in a
 15 way “supported by the microprocessor 310.” *See* '890 patent, 8:62-65; 12:65-13:12. This
 16 exclusion of the second embodiment, which appears to be unintentional, is unnecessary and
 17 improper.

18 The Court’s claim construction order reasoned that, because the phrase being construed
 19 included the term “central processing unit” or CPU, it would be understood to mean a unit of a
 20 computing system that fetches, decodes, and executes programmed instructions. *See* Order at 12
 21 & n.26 (citing *Modern Dictionary of Electronics* 107 (7th ed. 1999)). The Court goes on to
 22 observe that the '890 patent specification uses the term CPU consistently with this meaning,
 23 citing to a selection in the patent that refers to the DMA CPU 72 of the first embodiment. *See*
 24 Order 12 & n.27 (citing '890 patent, 8:22-24). However, the Court’s reasoning relies exclusively
 25 on the DMA of the first embodiment (DMA CPU 72) without regard to the second embodiment,
 26 which replaces “the DMA processor 72 . . . with a more traditional DMA controller 314.” '890
 27 patent, 12:61-65. Although the Court correctly recognized that the DMA CPU 72 of the first
 28

1 embodiment is described consistently with the dictionary definition of CPU that it relied on, the
 2 Court failed to account for the DMA CPU 314 of the second embodiment, which is different.

3 The DMA CPU 314 is different from the DMA CPU 72 of the first embodiment. The
 4 Court correctly recognized that the DMA CPU 72 of the first embodiment was considered
 5 advantageous because it “does not require use of the main CPU during DMA requests and
 6 responses . . . which provides very rapid DMA response with predictable response times.” Order
 7 at 12 & n. 29. However, the Court’s reasoning only takes into account the specification’s
 8 discussion of the advantages of the first embodiment, which uses the DMA CPU 72, and ignores
 9 the second embodiment of the invention described in connection with Figure 9, which uses “a
 10 more traditional DMA controller 314” instead of the DMA co-processor DMA CPU 72. *See*
 11 ’890 patent, 12:61:65. The patent states that the second type of microprocessor 310 of the
 12 second embodiment (distinguished from microprocessor 50 of the first embodiment) is used
 13 because it resides on a more crowded DRAM die.” *Id.* Because of this more crowded
 14 arrangement, the second embodiment uses the more traditional DMA controller 314 “[t]o keep
 15 chip size as small as possible.” *Id.* This is directly in line with several “objects” of the invention
 16 recited in the specification but not explicitly acknowledged in the Court’s claim construction
 17 order. *See e.g.*, ’890 patent, 1:61-63 (“to provide a microprocessor with a reduced pin count and
 18 cost compared to conventional microprocessors”); ’890 patent, 1:65-67 (“to provide a high
 19 performance microprocessor that can be directly connected to DRAMs without sacrificing
 20 microprocessor speed”). Indeed, the second embodiment shown in Figure 9 is presented as a
 21 “solution to the bandwidth/bus path problem” associated with the microprocessor 50 of the first
 22 embodiment. *See* ’890 patent, 8:60-9:1.

23 Patent claims “must be read in view of the specification, of which they are a part.”
 24 *Phillips*, 415 F.3d at 1315 (citing *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed.
 25 Cir. 1995)). “The proper definition is the ‘definition that one of ordinary skill in the art could
 26 ascertain from the intrinsic evidence in the record.’” *Id.* at 1314 quoting *Unitherm Food Sys.,*
 27 *Inc. v. Swift-Eckrich, Inc.*, 375 F.3d 1341, 1351 (Fed.Cir.2004). One of ordinary skill in the art
 28

1 would understand the term DMA CPU consistent with the two embodiments of the '890 patent
2 discussed above. *See Phillips*, 415 F.3d at 1315-16.³

3 Defendants respectfully submit that the intrinsic record in this case—including the
4 specification and the file history (which includes the restriction requirement and reexamination
5 proceeding)—support Defendants' proposed construction for DMA CPU of "electrical circuit for
6 reading and writing to memory that is separate from a main CPU." Only this construction avoids
7 improperly limiting the claim to a particular embodiment. On the other hand, the Court's
8 construction limits the claim to the first embodiment, which is improper. *Phillips*, 415 F.3d at
9 1323 ("[A]lthough the specification often describes very specific embodiments of the invention,
10 we have repeatedly warned against confining the claims to those embodiments.") (citations
11 omitted); *see also DSW, Inc. v. Shoe Pavilion, Inc.*, 537 F.3d 1342, 1348 (Fed. Cir. 2008)
12 ("[W]hen claim language is broader than the preferred embodiment, it is well-settled that claims
13 are not to be confined to that embodiment."). Indeed, even if a patent only describes a single
14 embodiment, it is well settled that the claims need not be limited to that embodiment alone.
15 *Gemstar-TV Guide Int'l, Inc. v. Int'l Trade Comm'n*, 383 F.3d 1352, 1366 (Fed. Cir.2004). Here,
16 however, the case is even clearer, because the patent described multiple embodiments. The
17 claim should not be limited to a single embodiment.

18 Accordingly, in view of the specification and other intrinsic record evidence, Defendants
19 submit that the DMA CPU of claim 11 of the '890 patent should be construed according to
20 Defendants' proposed construction.

21
22 ³ It is fundamental that an inventor may act as his or her own lexicographer. Thus,
23 the Court's reliance on a technical dictionary definition that is consistent with one embodiment
24 but inconsistent with another may be misplaced. *See* Order at 12 n.26 (citing *Modern Dictionary*
25 *of Electronics* 107 (7th ed. 1999)). Indeed, the Federal Circuit has stated that in cases where the
26 specification reveals that the inventor gave a claim term a special meaning that differs from the
27 meaning it might otherwise possess, "***the inventor's own lexicography governs.***" *Phillips*, 415
28 F.3d at 1318 (emphasis added), citing *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359,
1366 (Fed.Cir.2002). Consistent with this principle, the Federal Circuit has "repeatedly warned
against confining the claims to [particular] embodiments." *Phillips*, 415 F.3d at 1323.

Conclusion

For the reasons set forth above, Defendants respectfully submit that the Court should reconsider its construction of the term “separate direct memory access central processing unit” (or “DMA CPU” as it is referred to throughout this brief). Defendants further respectfully submit that the Court should construe this term according to Defendants’ originally proffered claim construction to mean “electrical circuit for reading and writing to memory that is separate from a main CPU.” Only Defendants’ proposed claim construction is consistent with the intrinsic record as a whole and avoids unnecessarily limiting the claim term to a single embodiment of the ’890 patent to the exclusion of others.

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Respectfully submitted,

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